

**CLAIMS:**

What is claimed is:

1. A method of operating an electronic locking device  
 5 using a wireless communication device, comprising:  
     receiving a master key code from a master key  
     supplier;  
     generating a secondary key code from the master key  
     code; and  
     transmitting the secondary key code to the wireless  
     communication device, wherein the secondary key code is  
     used by the wireless communication device to operate the  
     electronic locking device.
- 15 2. The method of claim 1, wherein the secondary key  
     code includes a secondary key code portion and zero or  
     more of a master key code portion, an activation/  
     expiration portion, a wireless communication device  
     identification portion, a time of issue portion, and a  
     time of last use portion.
- 20 3. The method of claim 1, wherein the master key code  
     is received via at least one network.
- 25 4. The method of claim 1, further comprising:  
     sending a master key code request to the master key  
     supplier, the master key code request identifying one or  
     more of a key supplier identifier, a product code of the  
     electronic locking device, an electronic certificate, and  
     a password.
- 30 5. The method of claim 1, further comprising:  
     transmitting the secondary key code to the

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electronic locking device using at least one of a wired communication link and wireless communication link.

5 6. The method of claim 5, wherein transmitting the secondary key code to the electronic locking device includes transmitting the secondary key code based on a network address of the electronic locking device.

10 7. The method of claim 5, wherein transmitting the secondary key code to the electronic locking device includes broadcasting the secondary key code along with an identifier of the electronic locking device.

15 8. The method of claim 1, wherein the wireless communication device is one of a personal digital assistant, a two-way pager, a mobile telephone device, a wireless transmitter, a handheld computer, a laptop computer, and a Bluetooth™ enabled device.

20 9. The method of claim 1, wherein transmitting the secondary key code to the wireless communication device includes transmitting the secondary key code using at least one of a wireless communication link and a wired communication link.

25 10. The method of claim 1, wherein transmitting the secondary key code to the wireless communication device includes transmitting the secondary key code as an attachment to an electronic mail message.

30 11. The method of claim 10, wherein the electronic mail message is sent to the wireless communication device at a remote time from use of the secondary key code to operate

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the electronic locking device.

12. The method of claim 5, further comprising receiving  
a confirmation message from the electronic locking device  
5 confirming reprogramming of the electronic locking device  
to accept the secondary key code.

13. The method of claim 1, wherein the electronic  
locking device is preprogrammed to accept the secondary  
10 key code.

14. The method of claim 5, wherein transmitting the  
secondary key code to the electronic locking device is  
performed at a remote time from transmitting the  
15 secondary key code to the wireless communication device.

15. The method of claim 1, further comprising:  
receiving a key code from the wireless communication  
device;  
20 authenticating the key code based on the secondary  
key code; and  
transmitting a command to operate the electronic  
locking device if the key code is authentic.

25 16. The method of claim 15, further comprising:  
determining if a number of attempts to operate the  
electronic locking device within a predetermined period  
of time exceeds a threshold; and  
placing the electronic locking device in a safety  
30 mode if the number of attempts exceeds the threshold.

17. The method of claim 16, wherein the safety mode is  
one of a slow down mode and a freeze mode.

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24. The method of claim 15, wherein authenticating the key code based on the secondary key code includes determining an activation/expiration time of the secondary key code and determining if a current time is within the activation/expiration time.
25. The method of claim 3, wherein the at least one network is the Internet.
26. The method of claim 1, further comprising:  
polling the electronic locking device; and  
receiving status information from the electronic locking device in response to polling the electronic locking device.
27. The method of claim 26, wherein the status information includes at least one of a current status of the electronic locking device, a time at which operation of the electronic locking device was last attempted, a key code last used to attempt to operate the electronic locking device, and a wireless communication device identifier of a wireless communication device last used to attempt to operate the electronic locking device.
28. The method of claim 26, further comprising operating the electronic locking device based on the received status information.
29. An apparatus for operating an electronic locking device using a wireless communication device, comprising:  
means for receiving a master key code from a master key supplier;

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means for generating a secondary key code from the master key code; and

first means for transmitting the secondary key code to the wireless communication device, wherein the  
5 secondary key code is used by the wireless communication device to operate the electronic locking device.

30. The apparatus of claim 29, wherein the secondary key code includes a secondary key code portion and zero or  
10 more of a master key code portion, an activation/expiration portion, a wireless communication device identification portion, a time of issue portion, and a time of last use portion.

31. The apparatus of claim 29, wherein the master key code is received from the master key supplier via at  
15 least one network .

32. The apparatus of claim 29, further comprising:  
20 means for sending a master key code request to the master key supplier, the master key code request identifying one or more of a key supplier identifier, a product code of the electronic locking device, an electronic certificate, and a password.

33. The apparatus of claim 29, further comprising:  
25 second means for transmitting the secondary key code to the electronic locking device using at least one of a wired communication link and wireless communication link.

34. The apparatus of claim 33, wherein the second means for transmitting the secondary key code to the electronic locking device includes means for transmitting the  
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secondary key code based on a network address of the electronic locking device.

35. The apparatus of claim 33, wherein the second means  
5 for transmitting the secondary key code to the electronic locking device includes means for broadcasting the secondary key code along with an identifier of the electronic locking device.

10 36. The apparatus of claim 29, wherein the wireless communication device is one of a personal digital assistant, a two-way pager, a mobile telephone device, a wireless transmitter, a handheld computer, a laptop computer, and a Bluetooth™ enabled device.

15 37. The apparatus of claim 29, wherein the first means for transmitting the secondary key code to the wireless communication device includes means for transmitting the secondary key code using at least one of a wireless  
20 communication link and a wired communication link.

38. The apparatus of claim 29, wherein the first means for transmitting the secondary key code to the wireless communication device includes means for transmitting the  
25 secondary key code as an attachment to an electronic mail message.

39. The apparatus of claim 38, wherein the electronic mail message is sent to the wireless communication device  
30 at a remote time from use of the secondary key code to operate the electronic locking device.

40. The apparatus of claim 33, further comprising means

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for receiving a confirmation message from the electronic locking device confirming reprogramming of the electronic locking device to accept the secondary key code.

5 41. The apparatus of claim 29, wherein the electronic locking device is preprogrammed to accept the secondary key code.

10 42. The apparatus of claim 33, wherein the second means for transmitting the secondary key code to the electronic locking device performs the transmission at a remote time from transmitting the secondary key code to the wireless communication device.

15 43. The apparatus of claim 29, further comprising:  
means for receiving a key code from the wireless communication device;  
means for authenticating the key code based on the secondary key code; and  
20 means for transmitting a command to operate the electronic locking device if the key code is authentic.

44. The apparatus of claim 43, further comprising:  
means for determining if a number of attempts to  
25 operate the electronic locking device within a predetermined period of time exceeds a threshold; and  
means for placing the electronic locking device in a safety mode if the number of attempts exceeds the threshold.

30 45. The apparatus of claim 44, wherein the safety mode is one of a slow down mode and a freeze mode.

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52. The apparatus of claim 43, wherein the means for authenticating the key code based on the secondary key code includes determining an activation/expiration time of the secondary key code and determining if a current  
5 time is within the activation/expiration time.

53. The apparatus of claim 31, wherein the at least one network is the Internet.

10 54. The apparatus of claim 29, further comprising:  
means for polling the electronic locking device; and  
means for receiving status information from the electronic locking device in response to polling the electronic locking device.

15 55. The apparatus of claim 54, wherein the status information includes at least one of a current status of the electronic locking device, a time at which operation of the electronic locking device was last attempted, a  
20 key code last used to attempt to operate the electronic locking device, and a wireless communication device identifier of a wireless communication device last used to attempt to operate the electronic locking device.

25 56. A computer program product in a computer readable medium for operating an electronic locking device using a wireless communication device, comprising:

first instructions for receiving a master key code from a master key supplier;

30 second instructions for generating a secondary key code from the master key code; and

third instructions for transmitting the secondary key code to the wireless communication device, wherein

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the secondary key code is used by the wireless communication device to operate the electronic locking device.

- 5 57. A method of operating an electronic locking device using a wireless communication device, comprising:
- requesting a secondary key code from a key code supplier;
  - receiving the secondary key code associated with the
  - 10 electronic locking device, the secondary key code having been generated based on a master key code; and
  - transmitting the secondary key code to the
  - electronic locking device, wherein the electronic locking device is operated in response to receiving the secondary
  - 15 key code.

58. The method of claim 57, wherein the secondary key code includes a secondary key code portion and zero or more of a master key code portion, an activation/
- 20 expiration portion, a wireless communication device identification portion, a time of issue portion, and a time of last use portion.

59. The method of claim 57, wherein the wireless
- 25 communication device is one of a personal digital assistant, a two-way pager, a mobile telephone device, a wireless transmitter, a handheld computer, a laptop computer, and a Bluetooth™ enabled device.

- 30 60. The method of claim 57, wherein receiving the secondary key code includes receiving the secondary key code as an attachment to an electronic mail message.

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61. The method of claim 60, wherein the electronic mail message is received at a remote time from use of the secondary key code to operate the electronic locking device.

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62. The method of claim 57, wherein the electronic locking device is preprogrammed to accept the secondary key code.

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63. The method of claim 58, wherein the secondary key code portion and the one or more of a master key code portion, an activation/expiration portion, a wireless communication device identification portion, a time of issue portion, and a time of last use portion are encoded.

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64. The method of claim 57, further comprising:  
determining if a delete command is received; and  
deleting the secondary key code from a key storage  
if a delete command is received.

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65. The method of claim 64, wherein the delete command is received from one of a key supplier and the electronic locking device.

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66. A wireless communication apparatus for operating an electronic locking device, comprising:

means for requesting a secondary key code from a key code supplier;

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means for receiving the secondary key code associated with the electronic locking device, the secondary key code having been generated based on a master key code; and

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means for transmitting the secondary key code to the electronic locking device, wherein the electronic locking device is operated in response to receiving the secondary key code.

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67. The wireless communication apparatus of claim 66, wherein the secondary key code includes a secondary key code portion and zero or more of a master key code portion, an activation/expiration portion, a wireless communication device identification portion, a time of issue portion, and a time of last use portion.

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68. The wireless communication apparatus of claim 66, wherein the wireless communication apparatus is one of a personal digital assistant, a two-way pager, a mobile telephone device, a wireless transmitter, a handheld computer, a laptop computer, and a Bluetooth™ enabled device.

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69. The wireless communication apparatus of claim 66, wherein the means for receiving the secondary key code includes means for receiving the secondary key code as an attachment to an electronic mail message.

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70. The wireless communication apparatus of claim 69, wherein the electronic mail message is received at a remote time from use of the secondary key code to operate the electronic locking device.

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71. The wireless communication apparatus of claim 66, wherein the electronic locking device is preprogrammed to accept the secondary key code.

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72. The wireless communication apparatus of claim 67,  
wherein the secondary key code portion and the zero or  
more of a master key code portion, an activation/  
expiration portion, a wireless communication device  
5 identification portion, a time of issue portion, and a  
time of last use portion are encoded.

73. The wireless communication apparatus of claim 66,  
further comprising:  
10 means for determining if a delete command is  
received; and  
means for deleting the secondary key code from a key  
storage if a delete command is received.

74. The wireless communication apparatus of claim 73,  
wherein the delete command is received from one of a key  
supplier and the electronic locking device.

75. A computer program product in a computer readable  
20 medium for operating an electronic locking device,  
comprising:

first instructions for requesting a secondary key  
code from a key code supplier;  
second instructions for receiving the secondary key  
25 code associated with the electronic locking device, the  
secondary key code having been generated based on a  
master key code; and

third instructions for transmitting the secondary  
key code to the electronic locking device, wherein the  
30 electronic locking device is operated in response to  
receiving the secondary key code.

76. A method of operating an electronic locking device

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using a wireless communication device, comprising:

receiving, from a key supplier, a secondary key code for operating the electronic locking device, the secondary key code having been generated based on a master key code;

receiving a key code from the wireless communication device;

authenticating the key code using the secondary key code; and

operating the electronic locking device if the key code is authenticated.

77. An electronic locking device comprising:

means for receiving, from a key supplier, a secondary key code for operating the electronic locking device, the secondary key code having been generated based on a master key code;

means for receiving a key code from a wireless communication device;

means for authenticating the key code using the secondary key code; and

means for operating the electronic locking device if the key code is authenticated.

78. A computer program product in a computer readable medium for operating an electronic locking device, comprising:

first instructions for receiving, from a key supplier, a secondary key code for operating the electronic locking device, the secondary key code having been generated based on a master key code;

second instructions for receiving a key code from the wireless communication device;

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~~third instructions for authenticating the key code  
using the secondary key code; and~~

~~fourth instructions for operating the electronic  
locking device if the key code is authenticated.~~

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